

Schedule until the end...

4/24 → Quiz ch. 13 (45 min. Advisement)

4/29 → Quiz Ch. 14

5/1 → Test Ch. 13, 14, 15

5/2 → Progress Reports (45 min. Advisement)

5/16 → Senior Picnic/SLO concert

5/20 → Senior Awards

5/26 → Memorial Day

5/27 → EXAM!

The following is a set of random items: {1G, 4R, 4B, 7R, 6R, 5B, 9G, 2G, 3R, 6R}. Find the probability of each of the following questions:

a) $P(\text{even number}) = \frac{5}{10} = \frac{1}{2}$ (simplify if you can)

b) $P(\text{odd and green}) = \frac{2}{10} = \frac{1}{5}$ (for AND, must satisfy both cases)

c) $P(\text{blue}) = \frac{2}{10} = \frac{1}{5}$

d) $P(\text{even and red}) = \frac{3}{10}$

e) $P(\overset{\text{NOT}}{\downarrow} \sim \text{green}) = \frac{7}{10}$

f) $P(4 \text{ or blue}) = \frac{3}{10}$ (count if either a 4 or Blue satisfies either case)

Fill out the table and find the probabilities. Two dice are rolled at one time and the sum of the dice is found.

Sum	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

$$\text{a) } P(\text{even}) = \frac{18}{36} = \frac{1}{2}$$

$$\text{b) } P(\text{less than 4}) = \frac{3}{36} = \frac{1}{12}$$

$$\text{c) } P(\text{multiple of 3}) = \frac{12}{36} = \frac{1}{3}$$

$$\text{d) } P(\text{greater than 7 and even}) = \frac{9}{36} = \frac{1}{4}$$

$$\text{e) } P(\text{greater than 7 or even}) = \frac{15+9}{36} = \frac{24}{36} = \frac{2}{3}$$

You're playing poker with some friends, and are about to be dealt 5 cards from a well-shuffled standard deck.

- a) How many different hands are possible?
- b) How many hands contain only hearts?
- c) What's the probability you'll be dealt a flush (5 cards all the same suit)?

$$a) 52 C_5 = 2,598,960$$

$$b) 13 C_5 = 1287$$

$$c) P(\text{flush}) = \frac{\text{\# only hearts} + \text{\# only diamonds} + \text{\# only spades} + \text{\# only clubs}}{\text{total \# hands}}$$

$$= \frac{4(1287)}{2598960}$$

$$= 0.002$$

$$= 0.2\%$$

Formal Probability (Ch. 14):

• First 3 Rules for Working with Probability:

1. Make a picture.
 2. Make a picture.
 3. Make a picture.
- } Venn diagrams

• Formal Probability:

1. If the probability is \emptyset , the event cannot occur. If the probability is 1 , the event always occurs.

- A probability is a number between \emptyset and 1 .

- For any event A , $\emptyset \leq P(A) \leq 1$

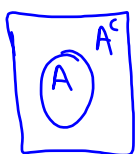
2. Probability Assignment Rule:

The set of all possible outcomes of a trial must have a probability of 1 .

$$P(S) = 1.$$

3. Complement Rule:

- Outcomes that are not in the event A are called the complement of A .
- These are written as A^c .



- The probability an event does not occur is 1 minus the probability does occur.

$$P(A^c) = 1 - P(A)$$